IN THE SPECIFICATION

Please amend the paragraph at page 1, lines 11-23, as follows:

--The concept of virtual base station (VBS) was originally applied in an ad hoc mobile network. VBS hierarchy generation protocol defines a dynamic mobile network, to simulate the functionality of a fixed hierarchy of the conventional cellular mobile network. Recently, DoCoMo proposes a dynamic VBS technique applied to cellular mobile network, and the technique performs macro-diversity of the cell cluster by dynamically changing size of the cell cluster (that is, a set of cells) and dynamically selecting a parent base station. Compared to the fixed cell hierarchy in the third generation mobile communication network (3G Release 99), the dynamic VBS technique can dynamically adjust the size of a cell cluster according to load condition and handover condition of a cell, whereby flexibly performing macro-diversity and balancing load of cells. However, such a dynamic VBS technique fails to clearly disclose aspecific technical solution, for example, by means of which principle the size of the cell cluster is adjusted and how to adjust it.--

Please amend the paragraph at page 1, lines 27-30 as follows:

--In connection with the technical problem in the prior art, the present invention proposes a method for implementing macro-diversity management by using intelligent VBS, so as to perform macro-diversity management in clusters having different sizes.--

Please delete the paragraph at page 1, line 32.

2

Please amend the paragraph at page 3, line 33 as follows:

--Figure 1(a) shows <u>Hierarchical Cell Structure</u> HCS hierarchy of the prior art;--

Please amend the paragraph at page 4, lines 21-25 as follows:

--Figure 1(b) shows the dynamic VBS hierarchy as proposed by DoCoMo. It can be ~~see~~ <u>seen</u> from the figure that, in each cell cluster, the parent base station performs macro-diversity on signals from a same user equipment receiver by all children base stations of the cluster, and the number of the cells of the cluster can be dynamically adjusted in accordance with movement of user equipments (UE).--

Please amend the paragraph at page 4, line 38 to 5, line 4 as follows:

--In the intelligent VBS hierarchy according to the present invention, the size of the cell cluster is intelligently adjusted by using the mobile server, and the macro-diversity of cell cluster is performed by dynamically selecting the parent base station. Specifically, according to load condition of a cell of the cluster, the most effective cell is selected as parent base station so as to balance inter-cell load balancing. Furthermore, since different VBSs can exchange information through the mobile server, the intelligent VBS hierarchy can perform ~~inter-cell cluster~~ <u>inter-cluster</u> and inter-VBS macro-diversities, which can not be implemented in the dynamic VBS technique as proposed by DoCoMo.--

Please amend the paragraph at page 5, line 36, to page 6 line 4 as follows:

--In the intelligent VBS hierarchy, the strategy for selection of cluster is very important. The present invention proposes some suitable strategies for selection of cluster for fulfilling requirements for soft capacity of different clusters and balancing inter-cluster load. In view of load balancing, the strategy for selection of cluster is closely related to load balancing and handover control. If there is no suitable strategy for selection of cluster, the case that the loading is not balanced may ~~be~~ exist, for example, the handover rate of some cells is too high, while the load of neighboring cells is too low. Moreover, inter-cluster and inter-VBS soft handovers are substantially reduced by means of suitable strategy for selection of cluster, whereby substantially reducing a plurality of Iur interface signalings due to inter-RNC handover in the conventional HCS hierarchy.--

Please amend the paragraph at page 6, lines 13-25 as follows:

--Secondly, in order to reduce too many inter-cluster handovers and too much interference, the cells within a single cluster should be compact ~~to each other~~ (that is, the cells shall be very close~~ly~~ to each other). As shown in figure 3(a), the cells within one cluster are inter-connected, but not compact, and one of the cells is surrounded by the cells of other clusters, which leads to ~~that~~ too many inter-cluster handovers and too much interference in this cell. In the cluster in which the cells are compact ~~to each other~~, due to decrease of handover boundaries, the probability of inter-cluster handover is accordingly reduced. In order to evaluate the compactness of cells within a cluster, let us define a compactness indicator (CI) which is used to define the ratio of the number of boundaries of inter-cluster handover relative to the sum of boundaries of all cells in the cluster. In the case shown in

figure 3(a), CI of all the clusters is equal to 14/24, while in the case shown in figure 3(b), CI of all the clusters is equal to 9/24.--

Please amend the paragraph at page 6, line 41, to page 7, line 2 as follows:

--(2) cost for inter-VBS soft handover. When a user equipment ~~being~~ in progress of call ~~is~~ moves from one VBS to another VBS, such a user equipment need_s_ to perform inter-VBS soft handover by the aid of the mobile server. Obviously, the fewer the number of inter-VBS soft handover, the less the cost.--

Please amend the paragraph at page 7, lines 4-7 as follows:

--(3) cost for inter-cluster soft handover. When a user equipment ~~being~~ in progress of call ~~is~~ moves from one cluster to another cluster, such a user equipment need_s_ to perform inter-cluster soft handover. Obviously, the fewer the number of inter-cluster soft handover of, the less the cost.--

Please amend the paragraph at page 7, lines 12-15 as follows:

--Assume that the considered serving area contains N cells. The amount of traffic or load of each cell is denoted as TDi, where i=1,...,~~N, p_{ij}~~ N p_{ij} is a transfer probability from cell i to cell j of the user equipment, and the handover load from cell i to cell j is ~~h_{ij}=p_{ij}TD_i, o~~ h_{ij}=p_{ij}TD_i.--

5

Please amend the paragraph at page 7, lines 16-36 as follows:

--~~Meantime~~ <u>Meanwhile</u>, assume that the serving ~~are~~ <u>area</u> contains M VBSs, and SEC$_m$ is set of clusters within VBS$_m$, SC$_k$ is the soft capacity of cluster k, where k=1,..., K, and CBS$_k$ is a set of cells within cluster k. In order to clearly describe the cost function, we have to define some variables. For example, if cell i belongs to cluster k, a binary variable x$_{ik}$=1 is defined. Assume $y_{im} = \sum_{k \in SEC_m} x_{ik}$, if cell i belongs to VBS$_m$, a binary variable y$_{im}$=1 is defined. If cells i and j belong to VBS$_m$, a binary variable z$_{ijm}$=1 is defined. Accordingly, the cost for inter-VBS soft handover is described by using a variable $z_{ij} = 1 - \sum_m z_{ijm}$. Please note that, if inter-VBS soft handover occurs, cells i and j belong to different VBSs, that is, z$_{ijm}$=0. When cells i and j belong to cell cluster k, w$_{ijk}$=1. To this end, the cost for inter-cluster soft handover can be calculated by using w$_{ij}$-z$_{ij}$, and $w_{ij} = 1 - \sum_k w_{ijk}$. If the inter-cluster soft handover merely occurs in the case that cells i and j, to which the user equipment is to be handover, belong to different clusters within a single same VBS, a variable sc$_k$ is defined as $sc_k = \sum_i TD_i x_{ik} - SC_k$, which denotes <u>a</u> difference between load requirement and soft capacity in cell k. After these variable<u>s</u> have been defined, minimized target cost function, which is used to balance inter-cell load and handover rate, can be defined by the equation (1), which takes into consideration the cost for congesting call due to overload ~~and the cost functions of inter VBS soft handover and inter cluster~~<u>, the cost of inter-cluster soft handover, and the cost of inter-VBS soft handover</u>:

6

$$c_1 \sum_k sc_k + c_2 \sum_i \sum_j h_{ij} z_{ij} + c_3 \sum_i \sum_j h_{ij} \left(w_{ij} - z_{ij}\right).$$

(1)--